

U.S. CENTERS FOR DISEASE CONTROL AND PREVENTION

Information Technology Strategic Plan FY 2017–2021

Empowering public health practice, research and science through the innovative, collaborative, transparent, and cost-effective use of informatics and information technologies



**U.S. Department of
Health and Human Services**
Centers for Disease
Control and Prevention

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1. Executive Summary

This CDC Information Technology (IT) Strategic Plan (CITSP) for FY 2017–2021 coincides with CDC’s 70th anniversary and is the latest version of IT strategic plans that date back to 1985. Since its origin as the Communicable Disease Center in 1946, CDC has been the champion of public health research and practice, putting science into action for protecting and improving the public’s health. The plan will be dynamic given the constant evolution of public health, the CDC mission, and the changing nature of IT products, services, and capabilities. CDC worked to ensure that its IT strategic plan recognizes and supports the IT strategic plan released by the Department of Health and Human Services (DHHS) in 2016.

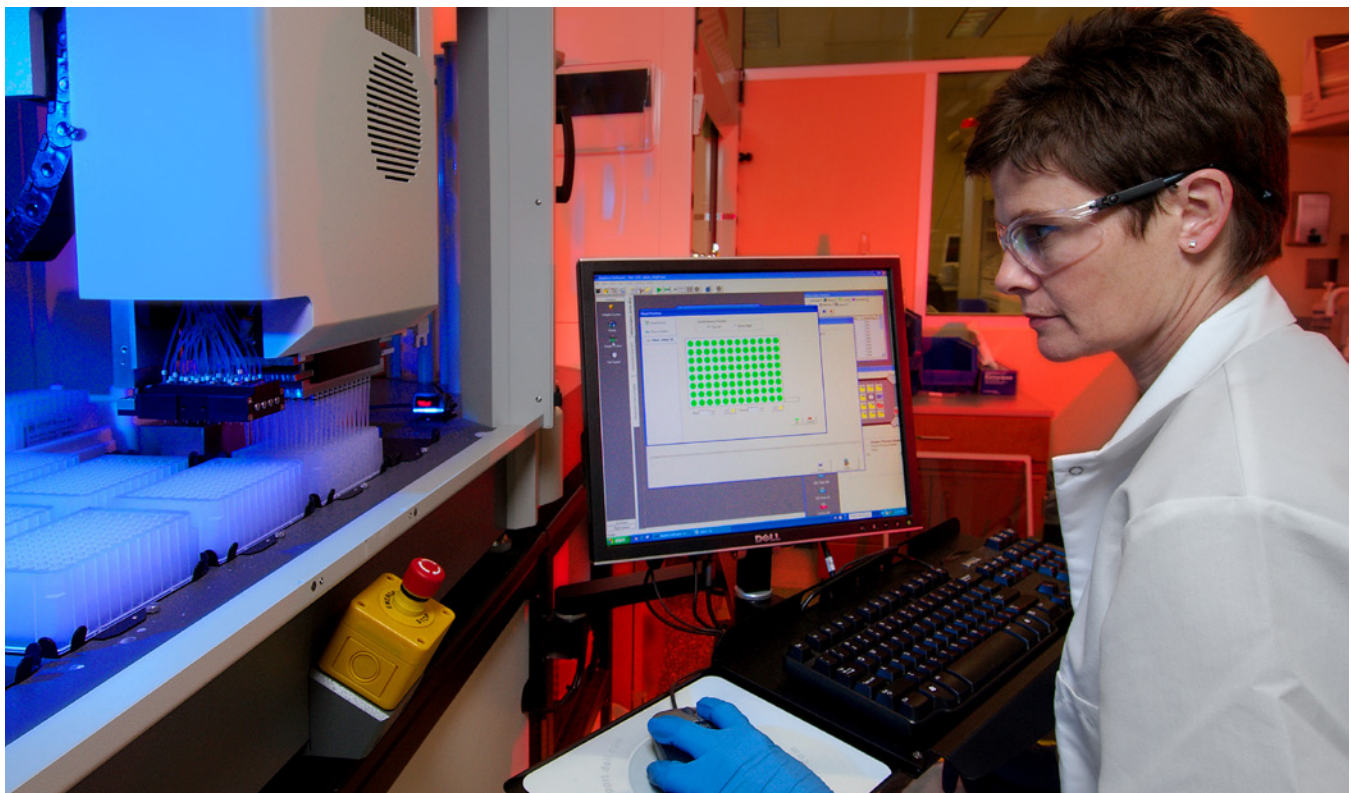
Every year, CDC spends more than \$500 million on over 700 information systems and other IT investments that serve about 20,000 CDC staff around the world, providing critical services and information to public health partners, healthcare providers, and people making health choices here and abroad.

The plan’s vision, mission, guiding principles, goals, objectives, and key performance indicators combine to form a roadmap of high-level direction and areas of emphasis for IT products and services that support public health science, practice, and administration over the next five years.

The plan is composed of five goals, 17 objectives, and over 40 performance indicators. The goals are:

- 1. Timely Public Health Data and Information for Health Monitoring and Protection**
- 2. IT Tools to Detect and Respond to Health Security Threats**
- 3. Robust IT Infrastructure Supporting Public Health Science and Practice**
- 4. Business Systems, Services, and Practices Supporting CDC Programs**
- 5. Proficient IT Workforce Employing Enterprise Approaches**

The plan extends beyond ambitions; it includes practical and accountable measures to gauge progress throughout the duration of the plan and to help inform investment decisions, monitor progress status, and identify areas requiring management attention.

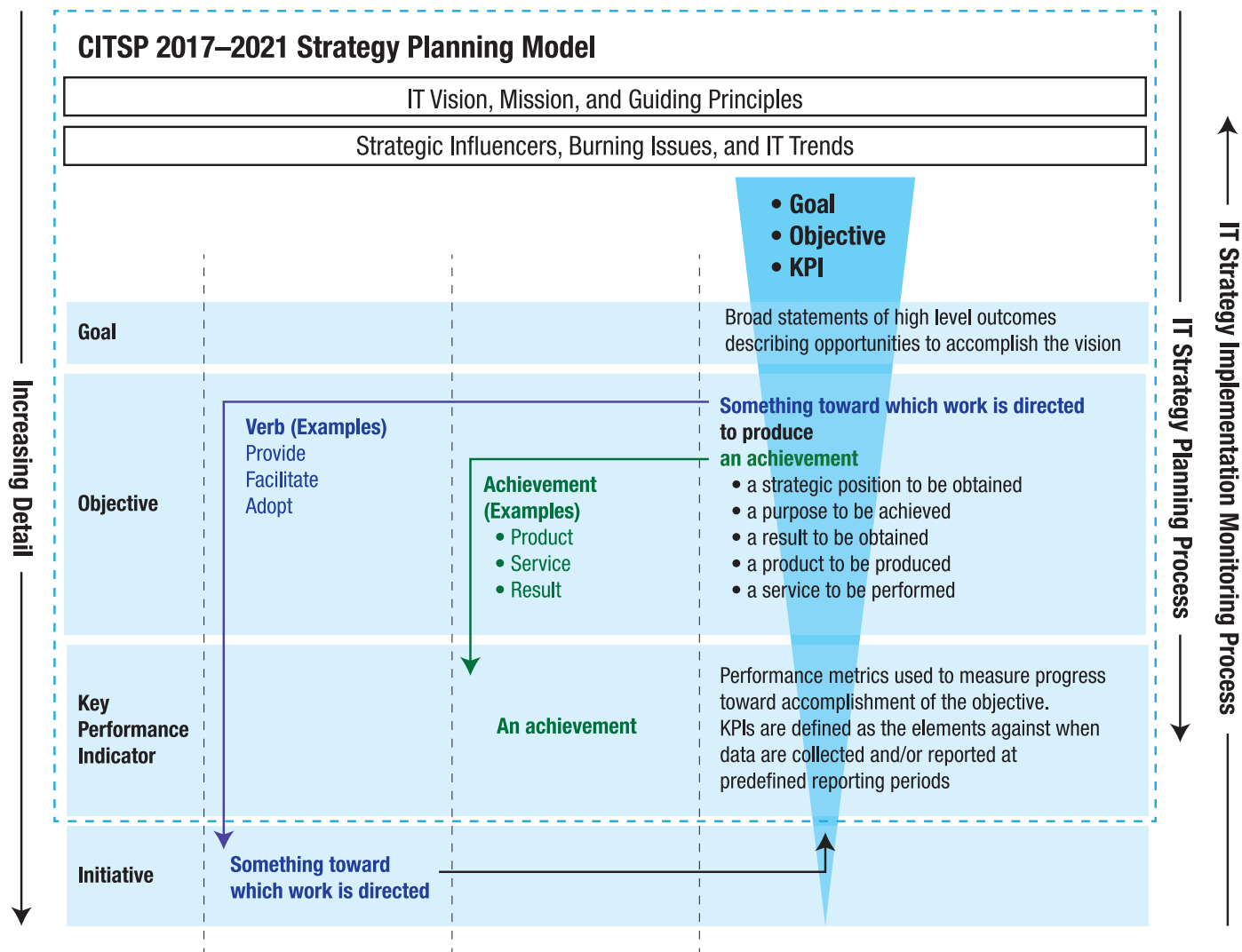


2. IT Strategy Planning Process

CDC's health security mission is wide-ranging and is comprised of an array of programs, functions, services, and disciplines to achieve its goals.

This Plan was developed through a broad collaboration with CDC programs to ensure IT is aligned with CDC's mission imperatives and priorities.

The planning model uses a taxonomy of goals, objectives, and key performance indicators (KPI) for identifying outcomes to be achieved. As KPIs were developed, responsible organizations were assigned so that there would be clarity on who would be reporting progress toward CITSP goals and objectives.



3. Environmental Analysis

The purpose of an environmental analysis in strategic planning is to identify factors that should be considered in developing a future strategy. A workgroup with 69 members from 28 CDC organizational units identified and discussed environmental factors that affect the CDC IT strategic direction. The workgroup discussed the impact of these environmental factors on the strategic direction of the agency and factored them into the development of the agency's strategic IT goals, objectives, and key performance indicators.

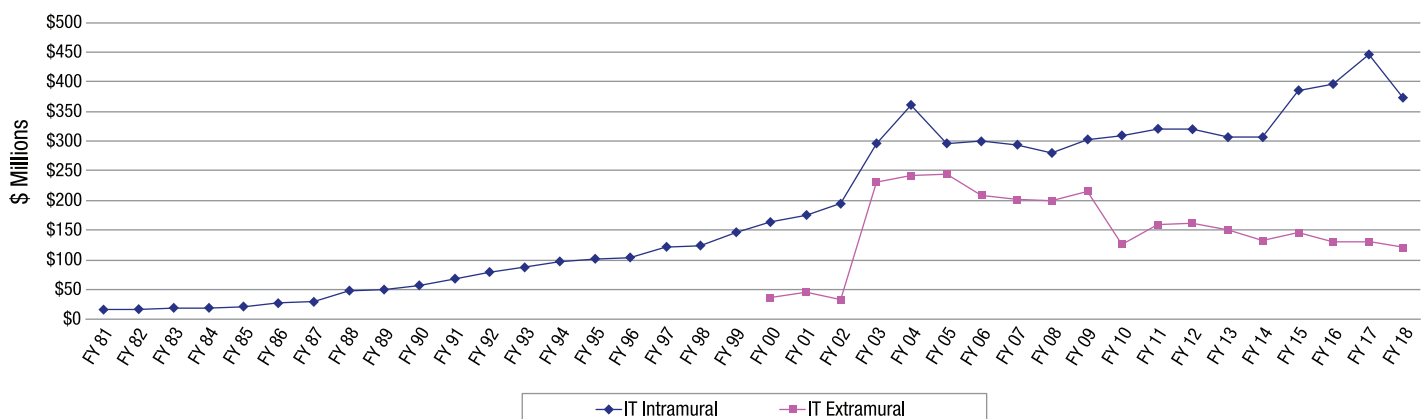
Strategic Influencers and IT Trends

- Affordable Care Act
- Big data and visualization
- Commodity IT
- Congressional mandates and budgets
- Cyber security
- Digital accountability and transparency (Data) Act
- Data management
- Emerging public health issues
- Emerging technologies
- Federal Information Security Modernization Act of 2014
- Federal IT Acquisition Reform Act (FITARA)
- Freedom of Information Act (FOIA)
- HHS IT guidance and direction
- Internet of things (IoT)
- IT succession planning with the aging workforce
- Mobile and digital expansion
- Open data policy
- Remote CDC/ATSDR staff (domestic and international)
- Shared services
- Ability to leverage and use cutting-edge IT systems and technologies
- CDC-wide network of IT leaders and informaticians
- Keeping pace with technology with knowledgeable people
- Open data strategy
- Innovation with a purpose and the ability to articulate the value proposition
- Convergence of mobile technology, social networking, and cloud computing for information sharing and distribution as the platform for digital business

CDC continues to grow as the threats to health increase domestically and internationally. CDC's budget and IT spending have grown at an average rate of 11% per year for the last 35 years.

With more than 700 information systems supporting functions throughout the agency, the use of IT is critical to all CDC activities, including the support of CDC's relationships with partners in public health, healthcare, laboratory and life sciences, health policymakers, and the public.

CDC IT BUDGET TRENDS



4. IT Strategic Direction

4.1 Vision

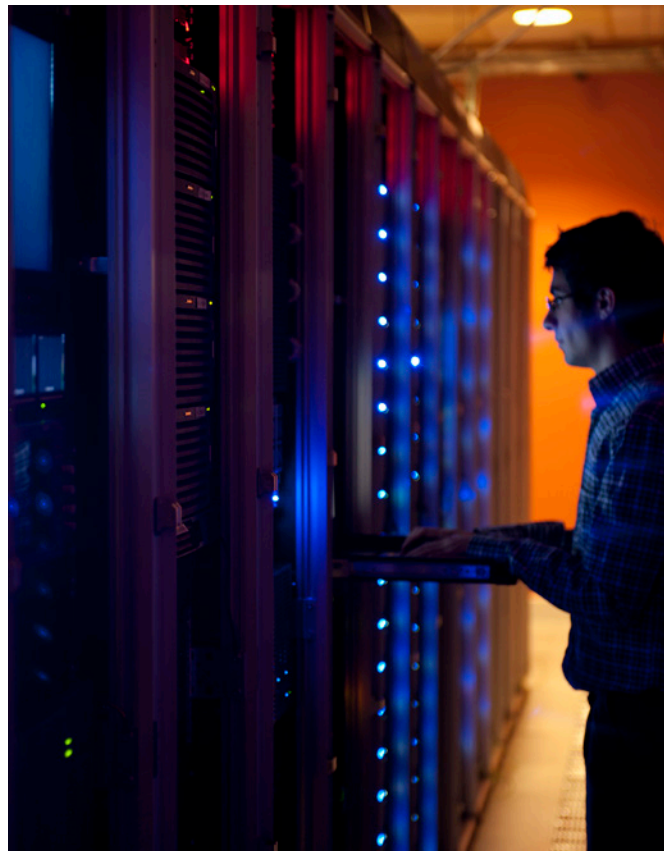
Empowering public health practice, research and science through the innovative, collaborative, transparent, and cost-effective use of informatics and information technologies.

4.2 Mission

Provide efficient and secure IT products and services that support public health science, practice, and administration.

4.3 Guiding Principles

- Align IT and informatics with HHS and CDC mission, goals, and initiatives
- Use IT and informatics best practices and standards
- Partner with stakeholders and customers in IT initiatives
- Pursue excellence in IT resource stewardship
- Develop IT solutions that are scalable, sustainable, reliable, and agile
- Use innovative technologies to maximize performance improvement
- Promote governance integrity and compliance of IT activities
- Promote innovation, collaboration, interoperability, scalability, transparency, and the adoption of shared services across all IT systems and services
- Ensure the security and privacy of all IT assets and data collected
- Strengthen IT and informatics workforce



4.4 Goals

The following five goals set the direction for IT priorities and investments. Each of these goals includes objectives and key performance indicators that are the basis for measuring progress during the course of the plan's horizon.

Goal 1: Timely Public Health Data and Information for Health Monitoring and Protection

Health monitoring is one of CDC's principle functions in the quest to detect emerging health threats, trends, disease outbreaks, and other health risks, as well as assessing the results of public health actions to prevent and respond to adverse health risks. IT is a key tool for expanding the collection of data, accelerating its timeliness, improving its accuracy and analytic readiness, and reducing the collection burden.

Goal 2: IT Tools to Detect and Respond to Health Security Threats

Analyzing the array of health data collected through health monitoring, laboratory testing, research and other avenues is how CDC determines new or changing health risks and what actions should be taken or recommended to prevent or reduce the risk from such threats. IT plays a critical role in data management, computational analytics, visualization, and other detection approaches.

Goal 3: Robust IT Infrastructure Supporting Public Health Science and Practice

The globalization of public health requires a 24/7 global presence with the capability to adjust to real-time circumstances through an elastic, on demand, scalable architecture and capability.

Goal 4: Business Systems, Services, and Practices Supporting CDC Programs

The business and administrative functions of public health are vital to program success by enabling efficient and high-integrity support for budget and finance, contracting and grants administration, human resources, security, safety, and asset management, and many other business systems and services.

Goal 5: Proficient IT Workforce Employing Enterprise Approaches

Building and retaining a highly qualified workforce is essential to success. It is also critical to equip workers with the right tools, procedures, aids, practices, and approaches to be effective in their role.

4.5 Objectives

For each goal, objectives are established that are specific actions that will advance CDC toward achieving the goals.

4.6 Key Performance Indicators

For each objective, KPIs are also established. These are measurable benchmarks for measuring progress toward the objective. Baselines will be established for each KPI and measured and monitored regularly to detect whether additional management attention is needed.

4.7 Table of Goals and Objectives

Goal 1	Timely Public Health Data and Information For Health Monitoring and Protection
Objectives	<ul style="list-style-type: none"> ■ Advance the CDC Surveillance Strategy to maximize surveillance effectiveness ■ Use the Internet of Things (IoT) for monitoring public health and Agency operations ■ Increase communication and delivery of health information through IT
Goal 2	IT Tools to Detect and Respond to Health Security Threats
Objectives	<ul style="list-style-type: none"> ■ Enhance health threat detection ■ Improve scientists' ability to analyze, model, and share complex scientific challenges with IT tools ■ Increase global health security by improving data exchange ■ Enhance data visualization capabilities ■ Enhance infrastructure and security to adapt to emerging trends and threats
Goal 3	Robust IT Infrastructure Supporting Public Health Science and Practice
Objectives	<ul style="list-style-type: none"> ■ Enhance the IT infrastructure resiliency to support a 24/7 global presence ■ Increase highly scalable computational capacity to accelerate CDC science
Goal 4	Business Systems, Services, and Practices Supporting CDC Programs
Objectives	<ul style="list-style-type: none"> ■ Leverage business service office-provided systems and services to enable programs to focus on mission activities ■ Increase the use of incremental systems development practices delivering more expeditious end-user functionality ■ Implement business systems roadmap ■ Increase the quality and usability of key enterprise data ■ Improve interoperability and reuse of shared IT services
Goal 5	Proficient IT Workforce Employing Enterprise Approaches
Objectives	<ul style="list-style-type: none"> ■ Expand learning resources and opportunities for IT and informatics workforce competencies ■ Increase the adoption of IT project management best practices